

TREE-RING STUDIES
of the
PUEBLO de ACOMA
A Preliminary Report

SUPPLEMENT NO. 1

by

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INTRODUCTION

A second collection trip was made to the Pueblo de Acoma the week of October 12, 1987. The crew consisted of the author and Jeffrey S. Dean, both from the Laboratory of Tree-Ring Research.

The purpose of the trip was to complete those units in Area H that had been bypassed in April 1987. However, since the expected HUD funding had not yet been received, the Restoration Project was not active and the Area H units were still unavailable. As a consequence, only a single unit was cored in Area H with the remainder of the work done in Area F and Area C.

In addition, we had the opportunity to survey Cebolleta Mesa and adjacent areas for living trees, particularly pinyon (Pinus edulis), that might be old enough to overlap with the beams cut in the mid 1600s. This of course would mean trees of an age class of 350 - 400 years; not impossible for pinyon, but relatively rare. We located two sites, one near Indian Lake on Cebolleta Mesa and one at Mesa Negra Spring at the western edge of the reservation. Both sites should be tested for tree age to determine if full coring is warranted.

For both these activities, coring at Sky City and reconnaissance, we were accompanied by Marvin C. Garcia and Dwight Lucario. Our accomplishments are due in large part to their helpfulness and good humor.

RESULTS

The field methods and analysis procedures employed for this collection were, in all ways, identical to those described in the initial report.

Area H. The single unit sampled, that of Governor Histia, revealed dates in the late 1800s. This confirms that much of the remodeling of the level I, street-facing, rooms was a phenomenon of the late 19th century, probably continuing until quite recently.

Area F. The units sampled here, from both level I and level II, confirm previous evidence that all room blocks had a nearly simultaneous origin in 1646 - 47 with most level II additions coming just a year or two later.

Area C. Five more units were sampled in this unit, again confirming that the north row of room blocks may be the earliest, if only by a year, on the mesa. Area C was evidently completed to its full three levels within five years of initial construction.

TABLE 1.

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ARCHAEOLOGICAL RESEARCHEXPLANATION OF SYMBOLS

- B - bark is present
- G - beetle galleries are present on the surface of the sample
- L - a characteristic surface patination and smoothness, which develops on beams stripped of bark, is present
- c - the outermost ring is continuous around the full circumference of the sample. This symbol is used only for complete cross sections
- r - less than a full section is present, but the outermost ring is continuous around available circumference
- v - a subjective judgment that, although there is no direct evidence of the true outside on the sample, the date is within a very few years of being a cutting date
- vv - there is no way of estimating how far the last ring is from the true outside. Many rings may be lost
- +
- one or a few rings may be missing near the outside whose presence or absence cannot be determined because the series does not extend far enough to provide adequate crossdating
- ++ - a ring count is necessary beyond a certain point in the series because crossdating ceases

The symbols B, G, L, c and r indicate cutting dates in order of decreasing confidence, unless a + or ++ is also present.

The symbols L, G, and B may be used in any combination with each other or with the other symbols except v and vv. The r and c symbols are mutually exclusive, but may be used with L, G, B, + and ++. The v and vv are also mutually exclusive and may be used with the + and ++. The + and ++ are mutually exclusive but may be used in combination with all the other symbols.

SPECIES CODES

- DF = Pseudotsuga menziesii, "Douglas-fir"
- PP = Pinus ponderosa, "ponderosa pine"
- PNN = Pinus edulis, "pinyon"
- JUN = Juniperus spp., "juniper"
- FIR = Abies cf. concolor, "white fir"
- SPR = Picea cf. engelmanni, "Engelmann spruce"
- QUER = Quercus spp., "oak"
- POP = Populus spp., "cottonwood or aspen"
- Non-con = Non-coniferous species; none of above - usually unidentified shrub

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ACOMA TREE-RING PROJECT REPORT

Owner: Ray Histia

Location: Area H, Unit 38, Level I

<u>Beam</u>	<u>Catalog No.</u>	<u>Species</u>	<u>Use</u>	<u>Date/Symbol (Table 1)</u>
11	ATP-191	PP	Viga	1863L
10	ATP-192	PP	Viga	1856L
9	ATP-193	PP	Viga	1870vv
8	ATP-194	PP	Viga	1863+vv
7	ATP-195	PP	Viga	1869vv
6	ATP-196	PP	Viga	1866vv
5	ATP-197	PP	Viga	1869B
4	ATP-198	PP	Viga	1855vv
3	ATP-199	PP	Viga	- No Date -
2	ATP-200	PP	Viga	1892vv
1	ATP-201	PP	Viga	1863vv

Comments:

Except for the viga with a date at 1892, it would be easy to place construction of this roof at 1869/70. Perhaps, then, the 1892 viga is a repair replacement, although there was no evidence that this beam had been emplaced later. In fact, it looks just like the other 10 vigas in the room. Whichever the case, this roof dates to the late 19th century and the period of substantial alteration of the "front" rooms throughout the pueblo.

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ACOMA TREE-RING PROJECT REPORT

Owner: Frank Garcia

Location: Area F, Unit 3, Level I

<u>Beam</u>	<u>Catalog No.</u>	<u>Species</u>	<u>Use</u>	<u>Date/Symbol (Table 1)</u>
1	ATP-202	PP	Viga	1647L*
2	ATP-203	PP	Viga	1647L**
3	ATP-204	PP	Viga	1647B*
4	ATP-205	PP	Viga	1647**
5	ATP-206	PP	Viga	1647L
6	ATP-207	PP	Viga	1647L
7	ATP-208	PP	Viga	1647L*
8	ATP-209	PP	Viga	1647B
9	ATP-210	PP	Viga	1644vv

Comments:

The vigas in this room have been removed and replaced in the course of the Restoration Project. It is probable, however, that they were originally from this roof, but their order has been altered. Taken at its face, there is no doubt that these vigas were cut in the late summer of 1647 (all have incomplete outer rings) and used in construction within a few months. It is unusual for a room of this time of construction to contain all ponderosa pine vigas; pinyon is prevalent in other areas sampled.

- * = vigas cut from same original tree
- ** = vigas cut from same original tree

LABORATORY OF TREE-RING RESEARCH

ACOMA TREE-RING PROJECT REPORT

Owner: Frank Garcia

Location: Area F, Unit 3, Level II

<u>Beam</u>	<u>Catalog No.</u>	<u>Species</u>	<u>Use</u>	<u>Date/Symbol (Table 1)</u>
1		Recent - Not Sampled		
2	ATP-211	PP	Viga	1652L
3		Recent - Not Sampled		
4	ATP-212	PP	Viga	1641vv
5	ATP-213	PP	Viga	1648B
6	ATP-214	PP	Viga	1550vv
7		Not Sampled		
8	ATP-215	PP	Viga	1648L
9	ATP-216	PP	Viga	1648B
10	ATP-217	PP	Viga	1647L
11		Recent - Not Sampled		

Comments:

The vigas in this room were removed, reused, and some replaced by the Restoration Project in 1982. Thus the dates simply confirm construction of the second level of Area F between 1647 and 1652.

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ACOMA TREE-RING PROJECT REPORT

Owner: Dennis Vallo

Location: Area F, Unit 19, Level I

<u>Beam</u>	<u>Catalog No.</u>	<u>Species</u>	<u>Use</u>	<u>Date/Symbol (Table 1)</u>
1		Recent - Not Sampled		
2	ATP-218	PNN	Viga	1606++LB
3	ATP-219	PP	Viga	1575+vv
4	ATP-220	PNN	Viga	1646LB
5	ATP-221	PNN	Viga	1637vv
6	ATP-222	PNN	Viga	1647LGB
7	ATP-223	PNN	Viga	1647LGB
8		Not Sampled		
9		Recent - Not Sampled		

Comments:

The dates from this room clearly place construction in late 1647 (terminal rings are incomplete) or early 1648. This agrees with other dates from the same level in this area of the pueblo.

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ACOMA TREE-RING PROJECT REPORT

Owner: Roberta Howeya

Location: Area C, Unit 11, Level I, north room

<u>Beam</u>	<u>Catalog No.</u>	<u>Species</u>	<u>Use</u>	<u>Date/Symbol (Table 1)</u>
1	ATP-224	PNN	Viga	1567+vv
2	ATP-225	PNN	Viga	1575++B
3	ATP-226	PNN	Viga	1646+B
4	ATP-227	PNN	Viga	1591vv
5	ATP-228	PNN	Viga	1577vv
6	ATP-229	PNN	Viga	1609++B
7	ATP-230	PNN	Viga	1646B
8	ATP-231	PNN	Viga	- No Date -

Comments:

Although construction of this room dates to 1646, in agreement with all other level I rooms in Area C, the two vigas with compressed outer ring series (++) and bark may indicate the use of dead trees.

LABORATORY OF TREE-RING RESEARCH

ACOMA TREE-RING PROJECT REPORT

Owner: Roberta Howeya

Location: Area C, Unit 11, Level I, south room

<u>Beam</u>	<u>Catalog No.</u>	<u>Species</u>	<u>Use</u>	<u>Date/Symbol (Table 1)</u>
1	ATP-232	PNN	Viga	- No Date -
2	ATP-233	PNN	Viga	1598vv
3	ATP-234	PNN	Viga	1646B
4	ATP-235	PNN	Viga	1548vv
5	ATP-236	PNN	Viga	1646B
6	ATP-237	PNN	Viga	1557vv
7	ATP-238	PNN	Viga	1646B

Comments:

The 1646 viga all have incomplete outer rings, indicating cutting in late summer or early autumn. These dates are consistent with others from level I of Area C.

LABORATORY OF TREE-RING RESEARCH

ACOMA TREE-RING PROJECT REPORT

Owner: Roberta Howeya

Location: Area C, Unit 13, Level II, north room

Beam	Catalog No.	Species	Use	Date/Symbol (Table 1)
1	ATP-239	PP	Viga	- No Date -
2	ATP-240	PNN	Viga	1631+vv
3	ATP-241	PNN	Viga	1646B
4	ATP-242	PNN	Viga	1647LB
5	ATP-243	PNN	Viga	1646LB
6	ATP-244	PNN	Viga	1646B
7	ATP-245	PP	Viga	1646LB
	ATP-246	PNN	Lintel	- No Date -

Comments:

The second level of rooms in Area C were built shortly after the first level; possibly within a year if these dates are representative of the whole area.

LABORATORY OF TREE-RING RESEARCH

ACOMA TREE-RING PROJECT REPORT

Owner: Roberta Howeya

Location: Area C, Unit 11, Level II, north room

<u>Beam</u>	<u>Catalog No.</u>	<u>Species</u>	<u>Use</u>	<u>Date/Symbol (Table 1)</u>
1	ATP-247	PNN	Viga	1647L
2	ATP-248	PNN	Viga	1647LB
3	ATP-249	PNN	Viga	1627vv
4	ATP-250	PNN	Viga	1647L
5	ATP-251	PNN	Viga	1595vv
6	ATP-252	PNN	Viga	1646L
7	ATP-253	PNN	Viga	1646L
	ATP-254	PNN	Lintel	1598L

Comments:

The 1646-47 cutting dates for the roofs of the second level are, once again, consistent throughout Area C. Some of the 1646 vigas and some of the 1647 vigas have incomplete outer rings; thus, two cutting events must have supplied the beams for this and the preceding room. The date of the lintel is suggestive of reuse from the earlier pueblo.

LABORATORY OF TREE-RING RESEARCH

ACOMA TREE-RING PROJECT REPORT

Owner: Roberta Howeya

Location: Area C, Unit 13, Level III, north room

<u>Beam</u>	<u>Catalog No.</u>	<u>Species</u>	<u>Use</u>	<u>Date/Symbol (Table 1)</u>
1	ATP-255	PP	Viga	1651v
2	ATP-256	PP	Viga	- No Date -
3	ATP-257	PNN	Viga	1651L
4	ATP-258	PNN	Viga	1651vv
5	ATP-259	PP	Viga	1644vv
6	ATP-260	PP	Viga	- No Date -
7	ATP-261	PNN	Viga	1599vv
	ATP-262	PP	Aux	- No Date -

Comments:

This room provides the first good evidence that Area C was completed to a full three stories within five years of the beginning of construction. This third level roof is dated to 1651. The wall between this room and its neighbor to the south has been removed and the beams supported by a massive square auxiliary beam. Unfortunately, this latter beam did not date, so the timing of the alteration is only suggested by mid-1700s dates from the south room roof.